

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventor: Tomohiro IMAI et al.

Art Unit 2617

Appln. No.: 10/587,166

Exr. I. Jama

Filed: July 26, 2006

Conf. No. 7273

For: TRANSMITTING/RECEIVING APPARATUS AND  
TRANSMITTING/RECEIVING METHOD

RESPONSE UNDER 37 CFR § 1.111

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated December 10, 2008, the Applicants respectfully request reconsideration and allowance of this application in light of the following remarks.

Claims 1 and 4 stand rejected, under 35 USC § 103(a), as being unpatentable over Yamada et al. (US 2005/0129137) in view of Miyata et al. (US 2004/0022205). Claims 2, 3, and 5-10 stand rejected, under 35 USC § 103(a), as being unpatentable over Yamada in view of Miyata and Mills et al. (US 6,704,376). The Applicants respectfully traverse these rejections based on the points set forth below.

Claim 1 defines a transmitting/receiving apparatus that determines whether to perform space division multiplexing communication with or without directivity control based on a

correlation between channel estimation values of a previously received and a currently received known symbol.

The Office Action acknowledges that Yamada does not disclose the above-noted subject matter, but proposes that Miyata does (see the Office Action at page 3, lines 4-8).

More specifically, the Office Action proposes that Miyata discloses determining whether to perform space division multiple access communication based on a comparison between an ideal and actual directivity pattern (see page 3, lines 8-13). However, Miyata's disclosure of determining whether to perform space division multiple access communication is not the same as the Applicants' claimed subject matter of determining whether to perform space division multiplexing communication with or without directivity control. The Applicants' claimed subject matter supports increasing transmission efficiency by use or absence of directivity control (see specification page 4, lines 2-10). (References herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

Accordingly, the Applicants submit that the teachings of Yamada and Miyata, considered individually or in combination, do not anticipate or render obvious the subject matter defined by claim 1.

Independent claims 4, 6, 9, and 10 similarly recite the above-mentioned subject matter distinguishing apparatus claim 1 from the applied references, but claim 6 does so with respect to a communication apparatus, communicating with that of claim 4, that receives a determination of whether to perform space division multiplexing communication with or without directivity control and claims 9 and 10 do so with respect to methods. Mills is not cited in the Office Action for

supplementing the teachings of Yamada and Miyata with respect to the above-mentioned distinguishing subject matter. Therefore, the rejections applied to claims 2, 3, 5, 7 and 8 are deemed to be obviated, and allowance of claims 1, 4, 6, 9, and 10 and all claims dependent therefrom is considered to be warranted.

To promote a better understanding of the patentable distinctions of the Applicants' claimed subject matter over the teachings of the applied references, the Applicants submit the following additional remarks.

Claims 1 and 9 recite determining whether or not a correlation between a channel estimation value of a known symbol of a received signal received earlier and a channel estimation value of a known symbol of a currently received signal is a value to enable space division multiplexing communication with directivity control by a communicating party (feature 1). When it is determined that space division multiplexing communication with directivity control is not possible, an instruction is transmitted to the communicating party to perform space division multiplexing communication without directivity control (feature 2).

The Office Action acknowledges that Yamada does not disclose features 1 and 2, above (see Office Action page 3, lines 4-8). Although Miyata discloses determining whether to perform space division multiple access communication according to a level of error (see Miyata paragraph [0020]), as proposed in the Office Action (see Office Action page 3, lines 8-13), the Applicants' claimed subject matter differs from Miyata's disclosure in that it determines whether to perform directivity control based on a case where space division multiplexing communication is performed.

Claim 4 similarly recites feature 1 and further recites outputting a “1” as a transmitting weight to a multiplying section when it is determined that space division multiplexing communication with directivity control is not possible (feature 3). The Office Action does not expressly cite either Yamada or Miyata for disclosing feature 3.

Claim 6 recites outputting “1” as a transmitting weight to a multiplying section upon receiving a signal including an instruction to perform space division multiplexing communication without directivity control (feature 4). The Office Action acknowledges that Yamada and Miyata do not disclose this subject matter (see Office Action section 4, lines 10-19), but proposes that Mills discloses correlating a received signal with a known signal to produce a correlation result of “0” or “1” (see section 4, lines 19-23). However, Mills’ disclosure of producing a correlation result of “0” or “1” is not the same as the Applicants’ claimed subject matter of outputting “1” as a transmitting weight to a multiplying section upon receiving a signal including an instruction to perform space division multiplexing communication without directivity control.

Claim 10 recites feature 1 and further recites multiplying a transmission signal by a transmission weight of “1” when space division multiplexing communication with directivity control is not possible (feature 5). For reasons similar to those discussed in connection with feature 4, above, it is submitted that Yamada, Miyata and Mills fail to disclose or suggest feature 5.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

/James Edward Ledbetter/

Date: March 10, 2009  
JEL/DWW/att

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